DAIRYLAND POWER
COOPERATIVE

June 11, 2007

Mr. Robert Eckdale
Wisconsin Department of Natural Resources
Bureau of Air Management
P.O. Box 7921
Madison, WI 53707

Dear Mr. Eckdale:

SUBJECT: Proposed Order AM-32-05 Request for Rule Revisions to Chapter NR 446 that Adopt the Federal Clean Air Mercury Rule (CAMR) and Achieve Additional Mercury Reductions from Coal-Fired Electrical Generating Units after CAMR Implementation

Dairyland Power Cooperative (DPC) submits these comments on the Wisconsin Department of Natural Resources (WDNR) proposed rule relating to revision of Chapter NR 440 and NR 446 Wis. Adm. Code relating to the establishment of provisions for major electric generating units in Wisconsin to comply with the Clean Air Mercury Rule (CAMR) promulgated by U.S. Environmental Protection Agency (EPA). The proposed revisions to Chapter NR 446, if promulgated, would repeal certain existing provisions of the state's air mercury rule and create new provisions.

DPC is a rural electric cooperative, generation and transmission utility, with headquarters in La Crosse, Wisconsin. DPC provides the wholesale electrical requirements and other services for 25 member electric distribution cooperatives and 19 municipal utilities. These cooperatives and municipals, located in four states (Wisconsin, Minnesota, Iowa and Illinois), in turn, supply the energy needs of more than half a million people.

DPC's generation resources include coal, natural gas, hydro, wind, landfill gas, and animal waste. The coal-fired generating units that DPC owns and operates would be impacted by the rules that WDNR has proposed and, thus, DPC has an interest in the development of this rule.

The WDNR's published Scope Statement for Chapter NR 446 states: "The purpose of this action is to revise the state rule to **mirror** the federal CAMR requirements." (Emphasis added.) However, certain rule provisions that WDNR has proposed do not, in fact, "mirror" the EPA's CAMR rule. We are gravely concerned that WDNR has deviated from the published Scope Statement for this rule.

First, the inclusion of the 90% mercury emission reduction requirement (as well as other provisions in proposed Order AM-32-05) violates the statutory requirement for state and federal consistency with regard to the promulgation of a mercury emission standard. As a consequence, proposed Order AM-32-05 exceeds the WDNR's statutory rulemaking authority and is inconsistent with the Scope Statement prepared by the WDNR. A 90% emission reduction requirement is more stringent than the reduction percentage required by the federal CAMR. Likewise, the following provisions in the proposed rule are inconsistent with, or are otherwise more stringent than, the emission standards (including administrative requirements) that are associated with the federal CAMR rule:

- The failure to allow inter-state or intra-state emission trading;
- The sunsetting of emission allowances granted to retired units;
- The failure to allow banking of mercury reductions;
- The creation of an unworkable and overly complex output-based allocation methodology;
- The retirement of any unused new unit set-aside allocations that could be crucial to compliance of existing generation.

The inclusion of these more stringent emission standards is in direct violation of the statutory requirements contained in Wis. Stat. §§ 285.11(9) and 285.27. Further, the WDNR failed to complete the statutorily required analysis to support a finding which justifies these more stringent emission standards as required by Wis. Stat. §§ 285.11(9) and 285.27(2)(b).

The WDNR lacks authority to simply adopt the proposed mercury emission standards for existing sources. *See*, Wis. Stat. §§ 285.11(9) and 285.27(1). The statute authorizing the WDNR to promulgate an emission standard for mercury does not require a specific percent emission reduction. *See* Wis. Stat. § 285.27(2)(b). Instead, this statute directs the WDNR, before promulgating an emission standard for mercury, to make a finding under Wis. Stat. § 285.27(2)(b) that a more stringent "standard is needed to provide adequate protection for public health or welfare" and, further, under Wis. Stat. § 285.27(2)(b)3., to make "a finding that the chosen compliance alternative reduces risks in the most cost-effective manner."

The inclusion of these more stringent emission standards in the proposed rule also violates the statutory requirement in Wis. Stat. § 227.135(1)(f) that a scope statement provide a summary and preliminary comparison of a proposed rule to any existing or proposed federal regulation. This is because the Scope Statement developed here indicated that the state rule would "mirror" the CAMR. Clearly proposed Order AM-32-05 does not "mirror" the CAMR.

The deviation from the Scope Statement has also resulted in the Scope Statement failing to provide affected parties with the requisite knowledge and notice needed to effectively evaluate their right to request an economic impact report as permitted under Wis. Stat. § 227.137. An economic impact report would have provided critical information necessary for the public, regulators, and the regulated community to better understand and comment upon the full impact of the potential options under consideration.

In addition, the WDNR failed to comply with the requirement of Wis. Stat. § 227.14(2m)(4), which requires the WDNR to prepare a fiscal estimate for each proposed rule before it is submitted to the legislative council staff for review. The statute requires the fiscal estimate to include "the major assumptions used in its preparation and a reliable estimate of the fiscal impact of the proposed rule, including…For rules that the agency determines may have a significant fiscal effect on the private sector, the anticipated costs that will be incurred by the private sector in complying with the rule." Wis. Stat. § 227.14(2m)(4)(b). The WDNR failed to include a "reliable estimate" of the costs of compliance with the revisions to NR 446 for the 48 existing electrical generating units that are operated by the eight utilities named in the estimate. In fact, the fiscal estimate provides no actual estimate of these costs. Here again, a fiscal estimate would have provided critical information necessary to better understand and comment upon the full impact of the potential options under consideration by the WDNR.

Finally, the WDNR's failure to "mirror" the CAMR rule language caused the WDNR to improperly and incompletely analyze the potential effect of the proposed revisions to NR 446 on small businesses. The WDNR improperly relied upon the EPA's economic analysis which is associated with and premised upon states implementing the model federal rules. EPA's small entity economic analysis cannot be used to support any option other than full implementation of the EPA's recommended model rules to implement CAMR. However, since the proposed revisions to NR 446 do not "mirror" or otherwise incorporate the CAMR rule language, the WDNR failed to lawfully carry out its responsibilities under Wis. Stat. § 227.114.

Despite all of the foregoing substantive and procedural requirements, the WDNR included language in proposed Order AM-32-05 focusing on a 90% mercury emission reduction requirement without first making the statutorily required findings (supported by written documentation) that residual risks to public health exist after implementing CAMR and that a 90% reduction requirement is the most cost-effective compliance alternative to reduce those risks. This is of particular concern in light of EPA's determination that the federal model rules are the most cost-effective manner for controlling mercury emissions from utility units. *See* 70 Fed. Reg. 28606 (May 18, 2005).

Our comments on specific aspects of the WDNR's AM-32-05 rule proposal follow.

A. The EPA's Clean Air Mercury Rule is the Right Mercury Rule for Wisconsin

Dairyland Power supports adoption of the federal version of the EPA's CAMR rule, including the EPA's "Model Cap-and-Trade Program." We oppose all deviations from the federal CAMR rule and the Model Cap-and-Trade Program that WDNR has included in the proposed rule revisions in AM-32-05. When EPA was in the process of moving forward to finalize the CAMR rule, DPC supported EPA's initiative since we viewed the CAMR rule as achieving an acceptable balance among environmental, energy, and economic objectives and impacts. Today, we still hold that view.

As we explain elsewhere in our comments, research studies indicate that there is little benefit in reducing mercury deposition with more stringent, and very costly, requirements to reduce utility boiler mercury emissions beyond what is required by EPA's CAMR rule.

In the preamble to the federal CAMR rule, EPA makes the following statements regarding the benefits of the cap-and-trade approach to regulating mercury (Hg) air emissions from the electric utility sector:

> *Such a "cap-and-trade" approach to limiting Hg emissions is the most cost-effective way to achieve the reductions in Hg emissions from the power sector. The added benefit of the cap-and-trade approach is that it dovetails well with the sulfur dioxide (SO_2) and nitrogen oxides (NO_X) emission caps under the final Clean Air Interstate Rule (CAIR) that was signed on March 10, 2005. CAIR establishes a broadly-applicable cap-and-trade program that significantly limit SO_2 and NO_X emissions from the power sector. The advantage of regulating Hg at the same time and using the same regulatory mechanism as for SO_2 and NO_X is that significant Hg emissions reductions, especially reductions of oxidized Hg, can and will be achieved by the air pollution controls designed and installed to reduce SO_2 and NO_X. Significant Hg emissions reductions can be obtained as a "co-benefit" of controlling emissions of SO_2 and NO_X; thus, the coordinated regulation of Hg, SO_2, and NO_X allows Hg reductions to be achieved in a cost-effective manner.*[1]

Taking into consideration what EPA states in the preamble excerpt above, WDNR needs to step back and take a comprehensive view of all the air quality related rules that are currently in the regulatory pipeline. We encourage WDNR to take into account what is practicable and achievable without putting ratepayers at too much risk.

The WDNR's Air Management Bureau has seemingly been unwilling to acknowledge the extent, and for that matter the heavy cost, of the air emission control equipment that will be retrofit on Wisconsin's coal-fired electric utility boilers to achieve compliance with the CAIR rule. It is paramount that WDNR consider the integration of NR 446 mercury rule with the proposed CAIR rule (Order AM-03-06); doing so should give WDNR the reason to pull back from the path of creating mercury air emissions rules that are more stringent than what EPA is requiring of the states.

B. DPC Has Co-Sponsored Research in Atmospheric Deposition of Mercury in Wisconsin: Studies Show That Even Eliminating All WI. Utility Coal-Fired Boilers Only Results in Reduction of Mercury Deposition of Less Than 5 Percent

In May 2002, Atmospheric and Environmental Research, Inc. (AER) conducted a Wisconsin mercury atmospheric deposition case study[2] designed to gauge how estimates of mercury deposition in Wisconsin and neighboring states respond to changes in source emissions from those states. The research was sponsored by the Wisconsin Utilities Association (WUA) and DPC and managed by the Electric Power Research Institute (EPRI). A copy of the study report was delivered to WDNR and a formal presentation of the research findings was made to Air Management Bureau staff in June of 2002. For the record on AM-32-05, we have enclosed with our comment letter a copy of the May 2002 AER study report.

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[1] Federal Register / Vol.70, No. 95 / Wednesday, May 18, 2005 / Rules and Regulations, Page 28606

[2] Vijayaraghavan, K., K. Lohman, P. Karamchandani and C. Seigneur, 2002. Modeling Deposition of Atmospheric Mercury in Wisconsin, Report CP136-02-1 to the Electric Power Research Institute (EPRI), Palo Alto, CA.

The study simulated the transport, chemical, and physical transformations of mercury emissions using detailed chemical, meteorological, precipitation, and geographic data. The model simulations focused on the upper Midwestern and Northeastern United States. The WDNR's own inventory of in-state sources of mercury emissions was a primary input to the model.

At the time that the WUA and DPC sponsored the 2002 AER study, WDNR was considering "state-only" rules to required Wisconsin's major electric utilities to make extreme and very costly reductions in mercury air emissions from their coal-fired boilers. Also at that time, DPC and WUA members had told WDNR that we would support rules to reduce the level of mercury in the environment including reasonable state rules for reducing mercury air emissions from coal-fueled power plants. Considering the large gap that existed in the viewpoints as to what would be practical and effective rules for Wisconsin, the utilities sponsored the AER study with the desire for electric consumers and state policy makers to be more informed of the science behind the mercury deposition issue.

The results of the 2002 AER atmospheric modeling study indicated that when Wisconsin coal-fired electric utility boiler mercury emissions are completely eliminated (i.e., set to zero as an input to the model), wet mercury deposition declines by less than 4% at the four Wisconsin mercury monitoring sites and by less than 5% over most areas of the state. The study clearly shows that there would be limited environmental benefit achieved from the rules that WDNR was proposing. Although the study did not specifically evaluate the direct impact that reducing in-state mercury reductions would have on state fish advisories, since the expected reduction in the level of mercury deposited to lakes is so low (less that 5% if all the coal-fired boilers were shut down), no reduction in fish advisories would be anticipated. This is very important since much of the public support for extreme rules has been based on the potential to reduce state mercury fish advisories.

In 2007, and with WDNR proposing rules including mercury reduction requirements exceeding EPA's CAMR requirements and which do not include EPA's cap-and-trade program, DPC and WUA member utilities once again collaborated in sponsoring a study by AER to provide an update to the study conducted in 2002. We report the findings of this most recent study below.

C. The Results of the 2002 Study of Mercury Deposition in Wisconsin Are Still Valid and Studies Conducted Since 2002 Either Corroborate or Further Validate Those Results

The WUA member electric utilities and DPC have collaborated in sponsoring a study by AER, the same research firm and author of the 2002 study of atmospheric deposition of mercury in Wisconsin that is referenced in our comments above. The primary objective of the 2007 AER research was to review studies conducted since 2002 to assess whether the results of AER's 2002 modeling are affected by new research results and also to evaluate the extent to which these new studies show similar findings regarding mercury deposition in Wisconsin.

Conclusions from the 2007 AER study report are presented below.

- Recent advances in our knowledge of atmospheric mercury processes do not have any significant effect on the results of the 2002 study.

- The statistical analysis of mercury wet deposition measurements collected in Steubenville, Ohio led to an estimate of the contribution of coal combustion sources to mercury wet deposition at that location which is consistent with the prediction of TEAM for that same location, thereby corroborating the ability of TEAM to simulate the effect of emission reduction scenarios on mercury deposition (as was done in the 2002 study).
- Estimates of the contribution of all natural sources and anthropogenic sources outside of North America to mercury deposition in Wisconsin have been made by AER, Harvard University and the U.S. EPA using different modeling systems. Those estimates range from 60 to 85%, i.e., anthropogenic North American sources are estimated to contribute between 15 and 40% to mercury deposition in Wisconsin. (Note that the larger estimates of the North American anthropogenic source contribution are obtained with the AER modeling system, which includes TEAM; other groups estimate lower contribution from North American anthropogenic sources.)
- Calculations of mercury deposition were conducted by EPA using the CMAQ and REMSAD chemical transport models. EPA calculated with CMAQ that all U.S. coal-fired power plants contributed on average 8.4% to total mercury deposition in Wisconsin. EPA calculated with REMSAD that less than 5% of mercury emitted from Wisconsin anthropogenic sources is deposited within Wisconsin.
- New studies have shown that the TEAM results are likely to overestimate the contribution of coal-fired power plants to mercury deposition in the vicinity of those plants:
  (1) Grid-based models such as TEAM, CMAQ and REMSAD overestimate mercury deposition in the vicinity of elevated sources such as power plants.
  (2) Reduction of Hg^{II} to Hg^{0} may occur in coal-fired power plant plumes, thereby leading to less local mercury deposition of those estimated Hg^{II} emissions.
  (3) Large storm systems may lead to contribution to wet deposition of mercury from the upper atmosphere, which is not currently taken into account in existing models.

After review and evaluation of studies conducted since 2002, AER provides the assessment that results of the 2002 study of mercury deposition in Wisconsin are still valid. Studies that have been completed since 2002 either corroborate or further validate AER's 2002 study results. For the record on AM-32-05, we have enclosed with our comment letter a copy of the 2007 AER study report.

D. Current State of the Science Does Not Justify Requirements that Exceed EPA's CAMR

On May 16, 2007, Dr. Leonard Levin, a technical executive at the Electric Power Research Institute (EPRI) and internationally recognized expert on the issue of mercury in the environment, presented testimony to the U.S. Senate Subcommittee on Clean Air and Nuclear Safety. For more than twenty years, EPRI staff have conducted research on the environmental

mercury issue often times in collaboration with the U. S. Department of Energy and many other scientists and research investigators. Dr. Levin's testimony reported an up-to-date status of recent findings in areas of the presence and effects of mercury in the U.S. environment, the current status of mercury controls, and what the public the health benefits may be from state mercury regulations that are more stringent than EPA's CAIR and CAMR regulations.

Dr. Levin summarized his testimony with the following salient points:

- Controls of mercury more stringent than the EPA 70% national level appear to have diminishing returns, primarily due to intercontinental mercury transport from Asia and the form of mercury remaining in utility emissions after reaching the EPA target;
- Federal data show that mercury exposure in women of child-bearing age appears to have declined over the past decade, for reasons that are unclear (particularly since these women are eating more fish);
- State-level controls that bypass the Federal cap-and-trade system for mercury may actually lead to higher mercury deposition within that state, even for stricter control levels;
- EPRI cannot say with confidence that 90%-effective mercury control technologies are commercially available for all affected power plants.

Since Dr. Levin's testimony to the U.S. Senate Subcommittee is such a current overview of the science of issues surrounding the environmental mercury and regulation debate, for the record on AM-32-05, we have enclosed a copy of Dr. Levin's complete testimony with our comment letter. Dr. Levin's testimony strongly supports our comments above (i.e., section "A.") that WDNR should take a comprehensive view of the integration of CAIR and CAMR just as EPA has encouraged the states to do.

E. Compliance Costs for WI Mercury Rule Are More Than Twice EPA's CAMR

A study just completed on June 8, 2007 for the Center for Energy and Economic Development (CEED) provides an analysis of the cumulative costs that face Wisconsin's electric utilities for the period of 2009-2020 for compliance with CAIR/CAMR rules and for CAIR and the more stringent state mercury air emission regulatory regime being proposed by WDNR in AM-35-02. (Also referred to here as "WI Rule.") The specific focus of the analysis is to isolate the incremental compliance costs to Wisconsin electric utilities in moving from CAMR to the more stringent WI Rule.

An important finding of the CEED study is that the proposed WI rule would increase the cost of operating coal-fired generation facilities in Wisconsin by $450 million between 2009 and 2020. Therefore, the proposed WI Rule is more than two times more expensive than CAMR. For the record on AM-32-05, we have enclosed with our comment letter a copy of the June 2007 CEED study report.

We first will report a summary of the CEED modeling study of the expected retrofit of SO_2 and NO_X control equipment on Wisconsin's coal-fired utility boilers and the associated projected cumulative compliance cost for compliance with CAIR. We believe it is imperative that the total

cost that the utilities face for reducing all three pollutants be considered, just as EPA has suggested. The CEED study reinforces our view that EPA has it right in concluding that the coordinated regulation of mercury, SO_2, and NO_X, through an equally coordinated implementation of the CAIR and CAMR rules, allows mercury reductions to be achieved in a cost-effective manner.

CAIR: Breakdown of SO_2 and NO_X Compliance Costs. Wisconsin's utilities that install flue gas desulfurization (FGD) systems will predominately be scrubbing extremely low sulfur content coals, specifically coals from the Powder River Basin. By 2013, Wisconsin's utilities are expected to have retrofitted 4,380 MW of FGD systems in response to the SO_2 requirements of CAIR. A breakdown of the cumulative (2010-2020) annualized compliance costs to Wisconsin's utilities to meet the SO_2 element of CAIR is $2.8 billion for control technology and $238.2 million for allowances, indicating that Wisconsin's electric utilities will be significantly reducing their SO_2 emissions.

Similar to SO_2, the burning of PRB coal by Wisconsin's utilities has a significant effect on NO_X compliance due to PRB's very low NO_X emission rates. In response to CAIR, by 2013 WI generators will install SCR technology on 3,522 MW of capacity and SNCR technology on an additional 2,576 MW of the state's coal-fired capacity. A breakdown of the cumulative (2009 - 2020) annualized compliance costs to Wisconsin's utilities to meet the NO_X element of CAIR is $913.1 million for control technology and $106.1 million for allowances.

CAIR/CAMR v. CAIR/WI Rule. The cumulative annualized compliance costs to Wisconsin's electric utilities between 2009 and 2020 to meet CAIR/CAMR are projected to be almost $4.3 billion.[3] However, under a CAIR/WI Rule regulatory regime, compliance costs are projected to be almost $4.8 billion for the same 2009 to 2020 time period. Consequently, the proposed WI rule would increase the cost of operating coal-fired generation facilities in Wisconsin by $450 million between 2009 and 2020. ***Therefore, the proposed WI Rule is more than two times more expensive than CAMR.*** These incremental costs are only attributed to complying with the proposed mercury rule, because this rule would not alter any compliance decisions under CAIR.

CAIR/WI Rule Compliance. As stated above, the incremental cost to Wisconsin's utilities of moving from the CAMR Model Cap-and-Trade Program to the proposed WI Rule would be $450 million dollars between 2009 and 2020. The primary factors driving this incremental cost are the stringent reduction requirements, along with a more restrictive trading regime of the proposed WI Rule. More specifically under CAMR, which allows for inter-state trading and flexibility in compliance, Wisconsin utilities are able to install the less expensive halogenated active carbon injection (HACI) technology on 70 percent of its current coal-fired capacity (4,588 MW of a total 6,554 MW) by 2020, with mercury removal costs ranging between $12,000 and $57,000 per pound. However, under the proposed WI Rule, all of the state's 31 current coal-fired generating units (6,554 MW) in 2020 would have to install some type of mercury control technology. A consequence of installing technology on all current coal-fired capacity results in removal costs in excess of $250,000 per pound for some smaller and older units. It is assumed that all new/planned coal-fired capacity representing an additional 2,143 MW (which is in addition to the existing 6,554 MW of coal capacity) will be able to achieve a 90 percent removal of mercury in its coal.

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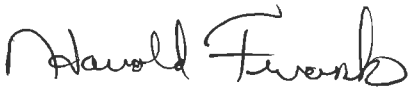
[3] Annualized compliance costs included an annual capital charge for control technology, annual fixed and variable O&M costs for control technology, changes in annual fuel costs due to compliance and allowance costs.

A consequence of the structure of the WI Rule, which requires individual utility generating system compliance without recourse to either a state or national allowance trading market, causes some generators to install technology earlier than is optimal when CAIR co-benefits are considered. The flexibility of CAMR allows utilities to choose the most cost-effective, or least cost, compliance strategy to achieve the reduction targets of the CAMR.

We conclude by thanking the Department for the opportunity to provide these comments. We believe that significant and fundamental changes are needed to the revisions of NR 446 Control of Mercury Emissions rule that the Department has proposed in AM-32-05. The AM-32-05 proposal violates statutory requirements and is inconsistent with the Scope Statement prepared by the Department. Dairyland Power supports adoption of the federal version of the EPA's CAMR rule, including the EPA's "Model Cap-and-Trade Program." We urge WDNR to pull-back the AM-32-05 proposal, follow the published Scope Statement for the rule and issue a new proposal for revising NR 446 that adopts the EPA's CAMR rule. We look forward to continuing to work constructively with the Department to address our concerns regarding the Department's efforts to revise the NR 446 rule.

Sincerely,

DAIRYLAND POWER COOPERATIVE



Harold Frank
Manager, Air Quality Programs

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Enclosure(s): 1. AER WI. Mercury Deposition Modeling Study 2002
2. AER WI. Mercury Deposition Modeling Review 2007
3. Dr. Leonard Levin, EPRI, May 2007 Testimony to U. S. Senate Subcommittee
4. CEED WI. Mercury Rule Compliance Cost Study, June 2007

cc w/o enc.: Kevin Kessler, Bureau Director, WDNR AM/7
Al Shea, WDNR